

# Case Study: Ara's Hot Chicken E-Commerce Platform

## Client & Context

Ara's Hot Chicken is a fast-growing local restaurant specializing in Nashville-style fried chicken. Prior to engaging our team, Ara's relied exclusively on in-store and phone orders, limiting reach and creating ordering bottlenecks during peak hours.

## Objectives & Challenges

- Rapid Online Ordering Rollout: Deliver a customer-friendly web portal within 6 weeks.
- Scalability & Reliability: Handle spiky traffic (lunch and dinner rush) without downtime.
- Secure Payments: Integrate PCI-compliant payment processing.
- Data-Driven Insights: Track user behavior to optimize menu layout and promotions.

## Tech Stack & Architecture

Frontend: React.js v18 with Hooks, Tailwind CSS, React Router, React Lazy/Suspense  
Backend & Hosting: Firebase Hosting, Cloud Functions (Node.js), Firestore  
Payments: Square Web Payments SDK, Cloud Functions + SendGrid  
Analytics: GA4 via gtag.js, Firebase Performance Monitoring  
CI/CD: GitHub Actions (ESLint, Jest, Firebase Preview Channels)

## Implementation Highlights

1. Responsive React SPA with modular components and virtualized scrolling.
2. Real-Time Order Queue using Firestore snapshot listeners and secure rules.
3. Square Integration via Cloud Functions and webhook handling.
4. Analytics-Driven UX improvements, e.g., homepage hero banner boost.
5. Security & Compliance: Firebase Auth for staff, HTTPS, in-browser tokenization.

## Outcomes & Impact

- 1,000+ Orders Processed in the first month with 0% downtime
- 50% Faster Checkout (1.2s average load, 3-step flow)
- 30% Increase in Online Sales within 8 weeks
- 100% Secure, PCI-Compliant Transactions

## Key Takeaways

Modular frontend design accelerates feature rollouts, serverless architecture scales seamlessly with demand, and data-first iteration drives continuous UX improvements.